

## Complementary feeding practices and it's associated factors among mothers having under 2 years children at Maternal and Child Health Clinic, Chitwan, Nepal

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### Abstract

Complementary feeding refers to introduction of solid, semi-solid and soft food with adequate amount, frequency and consistency in addition to breast milk at six months age of child. The aim of this study was to find out the complementary feeding practice and its associated factors among mothers having under 2 years children. The descriptive cross sectional study design was used to identify the complementary feeding practice and it's associated factors among mothers having under 2 years children at Maternal and child Clinic, Bharatpur. A total of 237 mothers having children 6-24 months were by using non probability, purposive sampling technique. Data was collected by using semi- structured interview schedule. Collected data was analyzed and interpreted through descriptive and inferential statistics. The findings of this study revealed that 26.6% of mother practice adequate complementary feeding to their children whereas 44.2% of mothers initiated the breastfeeding within one hour and 95.5% mothers practice prelactal feeding. The practice of timely initiation of complementary feeding, minimum meal frequency and minimum dietary diversity were 69.6%, 63.7%, 67.1% and 75.5% respectively mothers were continuing breastfeeding .

**Conclusion:** It is concluded that less than half of the mothers only practice adequate complementary feeding. So, there should be program which support and encourage the mothers on importance of adequate , appropriate and minimum feeding to enhance optimum growth and development of under two years children.

**Key words:** Adequate, Complementary Feeding, Practice

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### I. Introduction:

Complementary feeding means giving the child other nutritious foods in addition to breast milk and also is the transition from exclusive breastfeeding to family foods – referred to as complementary feeding – typically covers the period from 6 - 24 months of age, even though breastfeeding may continue to two years of age and beyond it. Under nutrition is associated with 45% of child deaths. Globally in 2015, 156 million children under 5 were estimated to be stunted (too short for age), 50 million were estimated to be wasted (too thin for height), and 42 million were overweight or obese. About 43% of infants 0–6 months old are exclusively breastfed. Few children receive nutritionally adequate and safe complementary foods; in many countries less than a fourth of infants 6–23 months of age meet the criteria of dietary diversity and feeding frequency that are appropriate for their age. Infant and young child feeding is a key area to improve child survival and promote healthy growth and development. The first 2 years of a child's life are particularly important, as optimal nutrition during this period lowers morbidity and mortality, reduces the risk of chronic disease, and fosters better development overall.<sup>1</sup>

There are eight core infant and young child feeding indicators to monitor and to guide the feeding practices of young children. WHO core indicators include: (1) early initiation of breastfeeding; (2) exclusive breastfeeding under six months; (3) continued breastfeeding upto two years; (4) their introduction of solid, semi-solid or soft foods; (5) minimum dietary diversity; (6) minimum meal frequency; (7) minimum acceptable diet; and (8) consumption of iron rich or iron fortified food.<sup>2</sup>

Chepang infant and young child feeding practices in Chepang communities in Nepal showed that, only 35% had knowledge about breastfeeding initiation within one hour, 62% had known about exact time for exclusive breastfeeding and 81% mothers had knowledge about appropriate time for introduction of complementary feeding and total time for breastfeeding. Mothers who initiated breastfeeding within one hour were 37% and exclusive breastfeeding up to 6 months.<sup>3</sup> The objective of this study was to find out the

complementary feeding practice and its associated factors among mothers having under 2years children in Maternal and Child Clinic, Bharatpur.

## II. Materials and Method

Descriptive cross- sectional research design was adopted was to find out the complementary feeding practices and its associated factors among mothers having under 2years children at Maternal and child Clinic (MCH) . A total 237 samples ,

**Study Design:** Descriptive, cross- sectional research design

**Study Location:** Maternal and child Clinic (MCH) , is a government institution which functions under District Public Health Office which is located in Bharatpur 10, Chitwan ,Nepal.

**Data collection time:** 2019/ 02/01 to 2019/03/01

### Sample size:

Sample size was calculated by using following formula,

$$n_0 = z^2pq/d^2,$$

At 95% Confidence Interval,  $Z_{0.05}$ ,  $\alpha = 1.96$

Incidence/Prevalence (p) = 83% (0.83) (NDHS Report, 2016)

$$q = 1 - 0.83 = 0.17$$

d = Effect size 5%=(0.05) maximum permissible error

n=Required sample size

$$n_0 = \frac{(1.96)^2 \times 0.83 \times 0.17}{(0.05)^2} = 216.8$$

To reduce non response error additional 10% was taken therefore, total sample size was 237.

### Subjects and selection methods:

Non- probability, purposive sampling technique was used to select the sample. Data was collected from those mother having 6- 24 months children attending MCH clinic. First of all the information for the sample was taken from the immunization Register. Then researcher chooses the mothers having 6-24 months children attending at MCH Clinic for immunization as a sample of study and others were excluded from the study.

### Procedure methodology

Ethical approval was obtained from Chitwan Medical College (CMC), Institutional Review Committee (IRC), Bharatpur -10, Chitwan. After getting permission from District Public Health Office, Chitwan, Data was collected by using structured interview schedule. The verbal informed consent was obtained from each respondent by clarifying the purpose of the study prior to data collection. Respondent's dignity was maintained by giving right to reject or discontinue from the research study at any time. Confidentiality of the information was maintained by not disclosing the information and using the information only for the research purpose. The research instruments consisted of three parts: Part I: Question related to Socio-demographic information, Part II: Question related to practice of breast feeding. Part III : Question related to Practice of Complimentary feeding

### Statistical analysis

Data was analyzed by using Statistical Package For Social Sciences (SPSS) version 20 for analysis. Data was analyzed by using descriptive statistics such as frequency, percentage, median. Inferential statistics (Chisquare) was used to measure the association between level of awareness and selected variables.

## III. Result

**Table 1 : Respondents' Socio-demographic characteristics**

**n=237**

Variables	Frequency	Percentage
<b>Age groups (in years)</b>		
<30 years	184	77.6
≥ 30 years	53	22.4
<i>Mean age ± SD=26.13±4. 382, Min=18 years Max=40 years</i>		
<b>Ethnicity</b>		
Brahmin/chhetri	129	54.4
Janajati	72	30.4
Muslims / Dalit	36	15.2
<b>Religion</b>		

Hindu	189	79.7
Buddhist and Christian	48	11.3
<b>Place of Residence</b>		
Rural	61	25.7
Urban	176	74.3
<b>Educational status (n=237)</b>		
Cannot read and write	4	1.7
Literate	233	98.3
<b>Educational level( n=233)</b>		
Basic education	70	30.0
Secondary education	109	46.8
Higher education	54	23.2
<b>Occupation</b>		
House maker	198	83.5
service	39	16.5
<b>Type of family</b>		
Joint	160	67.5
Nuclear	77	32.5
<b>Marital status</b>		
Living with husband	157	66.2
Husband abroad	80	33.8
<b>Number of Children</b>		
One	129	54.4
Two	98	41.4
Three	10	4.2
<b>Gap between the Children</b>		
Up to 3 years	25	10.5
More than 3years	212	89.5

Table 2 : Respondents' complementary feeding practices

n=237

Variables	Frequency	Percentage
<b>Age of the child(in month)</b>		
6-8months	18	7.6
9-11 months	79	33.3
12 -24 months	140	59.1
<i>Mean age±SD=12.09±3.602 Min=2,Max=24</i>		
<b>Birth order of the child</b>		
One	129	54.4
Two	98	41.4
Three	10	4.2
<b>Starting of breastfeeding after delivery (n=237)</b>		
Within 1 hour	103	44.2
2-3 hours	81	34.8
4-5 hours	9	3.9
More than 6 hours	44	17.1
<b>Prelacteal feeding(n=110)</b>		
Lactogen	105	95.5
Others*	5	4.5
<b>Stop of breastfeeding(n=22)</b>		
Before six months	18	81.9
After six months	4	18.1
<b>Feed alternative to breast milk(n=22)</b>		
<b>Lactogen</b>	18	81.9
Cow milk	4	18.1
<b>Practice exclusive breast feeding(n=237)</b>		
Yes	180	75.9
No	57	24.1
<b>Continuing breast feeding(n=215)</b>		
Yes		90.7

	215	
No	22	9.3
<b>Times of breastfeeding along with complementary feeding during day(n=215)</b>		
One –two times	6	2.7
Three-four times	51	23.7
Above four times	158	73.6
<b>Times of breast feeding during night(n=215)</b>		
One –two times	28	13.0
Three- four times	67	31.1
Above four times	120	55.9

**Table 3**  
**Complementary Feeding Practice of Mothers** **n=237**

Variables	Frequency	Percent
<b>Age of child starting complementary feeding</b>		
<6months	38	16.0
6 months	165	69.6
>6months	34	14.4
<b>Causes of starting complementary feeding before 6 months (n=38)</b>		
Not sufficient breast milk	32	80.0
Child not gaining weight	3	7.5
Culture practices	3	7.5
Mother not willing to breastfeed	2	5.0
<b>Cause of starting complementary feeding after six months (n=40)</b>		
Sufficient breast milk	21	52.5
Child refusal to complementary food	15	37.5
Elder told to do so	4	100.0
<b>Practice of mother of complementary food for 6-8 months</b>		
<b>Type of complementary food first introduced to child</b>		
Rice pudding	178	75.1
Soft rice , Pulses & Cerelac	59	24.9
<b>Types of food that child feed (n=59)</b>		
Ceralac	10	55.6
Super flour	10	55.6
Feeding solid/semi solid and soft food	18	100.0
Rice and pulses	1	5.6
<b>Food Diversity</b>		
Eggs	4	22.6
Vegetables	17	94.4
Fruits	17	94.4
Milk product	17	27.9
Meat product	6	33.3
<b>Frequency of feeding solid/semi solid and soft food (n= 18)</b>		
One times	10	55.5
2-3times	8	44.5
<b>Amount of feeding solid/semi solid and soft food (n=18)</b>		
30-60ml	10	55.5
125 ml	8	44.5

**Table 4** **n=79**  
**Practice of Mothers:Type of Complementary food, Amount, Frequency and Consistency for 9-11 months Children**

Variables	Frequency	Percentage
<b>Practice of complementary food for 9-11 months Children</b>		
<b>Types of complementary food that child feed</b>		
Ceralac	43	54.4
Super flour	39	49.4

Soft rice and pulses	77	97.4
Rice and pulses	27	34.2
<b>Food Diversity</b>		
Eggs	31	39.2
vegetables	8	10.1
Fruits	73	92.4
Milk product	76	96.3
Meat product	41	51.9
<b>Frequency of feeding solid/semi solid and soft food</b>		
Two-three times	49	62.1
Three-four times	30	37.9
<b>Amount of feeding solid/semi solid and soft food</b>		
125 ml	49	62.1
175 ml	30	37.9
<b>Practice of complementary food for 12-24 months (n=140)</b>		
<b>Types of complementary food groups that child feed</b>		
Ceralac	42	30.0
Super flour	74	52.9
Soft rice and pulses	126	90.0
Rice and pulses	117	83.6
<b>Additional food group</b>		
Eggs	97	69.8
Vegetables	129	92.8
Fruits	137	98.6
Milk product	127	91.4
Meat product	102	73.4
<b>Frequency of feeding solid/semisolid and soft food</b>		
Two-three times	55	39.2
Three- four times	45	32.2
Above four times	40	28.6
<b>Amount of solid/semisolid and soft food</b>		
125 ml	55	39.2
175 ml	45	32.2
250 ml	40	28.6

**Table: 5**  
**Practice of Preparation of Complementary Food**

n=237

Variables	Frequency	Percent
<b>Prepared super flour at home</b>		
Yes	51	21.5
No	186	78.5
<b>Type of water used in preparation of complementary food</b>		
Boiled water	223	94.2
Filter water	14	5.8
<b>Prepare of food for one feed only</b>		
Yes	225	94.9
No	12	5.1
<b>Keep separate utensils for child to feed</b>		
Yes	160	67.5
No	77	32.5
<b>6-8 months(n=18)</b>		
Adequate	6	33.3
Inadequate	12	66.7
<b>9-12months (n=79)</b>		
Adequate	17	21.5
Inadequate	62	78.5
Total	79	100
<b>12-24 months(n=140)</b>		
Adequate	40	28.6
Inadequate	100	71.4

**Table 6**  
**Status of Complementary Feeding Practice of the Mothers having under 2 years Children**

n=237

Practice	Frequency	Percentage
Adequate	63	26.6

Inadequate	174	73.4
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Table 6 revealed that only 26.6 % of mother practice adequate complementary feeding to their children.

**Table: 7**  
**Association between Complementary Feeding Practice and Socio-demographic Characteristics of Mothers**  
**n = 237**

Variables	Status of Complementary feeding practice		p-value
	Adequate No. (%)	inadequate No.(%)	
<30 years	46(25.0)	138(75.0)	0.196
≥30 years	17(32.1)	36(67.9)	
<b>Ethnicity</b>			
Brahmin/chhetri	36(36.4)	93(72.1)	0.337
Janajhati	21(29.1)	51(70.8)	
Others	6(16.7)	30(83.3)	
<b>Religion</b>			
Hindu	46(24.3)	143(75.7)	0.087
Non Hindu	17(35.4)	31(64.6)	
<b>Place of Residence</b>			
Rural	21(34.4)	40(65.2)	0.076
Urban	42(33.9)	134(76.1)	
<b>Educational status</b>			
Cannot read and write	0(0.0)	4(100.0)	NA
Literate	78(33.5)	155(66.5)	
<b>Literate, Educational level</b>			
Basic level education	13(18.6)	57(81.4)	0.159
Secondary level education	34(31.2)	75(68.8)	
Higher education	16(29.2)	38(70.4)	

NA- Not applicable, significant level at 0.05

Table 7 shows there is no statistical significant association between complementary feeding practices and selected variables.

**Table 8: Association between Complementary Feeding Practice and Socio-demographic Characteristics of Mothers**

**n = 237**

Variables	Association between Status of Complementary feeding practice		p-value
	Adequate No. (%)	Inadequate (%) No.	
<b>Occupation</b>			
House maker	48(24.2)	150(75.8)	0.054
Service	15(38.5)	24(61.5)	
<b>Marital status</b>			
Living with husband	39(24.8)	118(75.2)	0.242
Husband abroad	24(30.0)	56(70.0)	
<b>Type of Family</b>			
Nuclear	22(28.6)	55(71.4)	0.370
Joint	41(25.6)	119(74.4)	
<b>Number of children</b>			
One	34(26.4)	95(73.6)	0.612
Two	25(25.5)	73(74.5)	
Three	4(40.0)	6(60.0)	
<b>Gap between the children</b>			
Up to 3 years	6(24.0)	19(76.0)	0.757
More than 3 years	57(26.9)	155(73.1)	
6-8 months	6(33.3)	12(66.7)	0.414
9-11 months	17(21.5)	62(78.5)	
12-24 months	40(28.6)	100(71.4)	
<b>Sex of the present child</b>			

Male	38(27.0)	103(73.0)	0.500
Female	25(26.2)	71(74.0)	
<b>Birth order of the present child</b>			
One	33(25.4)	97(74.6)	1.946
Two	26(26.8)	71(73.2)	
Three	4(20.0)	6(60.0)	

Significant Level at 0.05

Table 8 shows there is no statistical significant association between complementary feeding practices and selected variables.

#### IV. Discussion:

The present study showed that majority (77.6%) of mothers were age less than 30 years with mean age were 26.13 years with age ranging between 18 to 40 years, similarly study conducted in Pokhara, Nepal to analyze the reason for early or late introduction of complementary feeding, most of respondents 440 (62.9%) were in the age group of 21-30 years among sample 700.<sup>4</sup> Regarding ethnicity more than half of mothers (54.4%) were Brahmin and Chhetri and religion Hinduism were found (79.7%). Regarding education status most of mothers were literate (98.3%) with secondary level study (46.8%) whereas study conducted in Kathmandu, Nepal 892 participants of study (81.1%) had some level of education with majority of them i.e. 342 participants (31.1%) having education of secondary level.<sup>5</sup>

This study reveals that 90.7% mothers were continuing breastfeeding along with complementary feeding. Similar study revealed by NDHS 2016 the survey data shows that 92% of breastfeed children age 6-23 months received solid or semisolid complementary food in addition to breast milk. The Kassena-Nanka Ghanaian study reported similar findings with 96.3% continuing breastfeeding after introducing complementary feed.<sup>7</sup> It is recommended that breast feeding should continue after introducing complementary feeding until child is two years old. This will give the necessary nutritional support while the child gradually gets accustomed to eating solid food.

In this study cent percent mothers encouraged the children during feeding and cent percent mothers done hand washing before feeding. Similar study is supported by Bhandari, Mazumder, Martines, Black & Bhan (2004), 34.8% mothers in the intervention group reported that they actively encouraged their child to eat more compared with 7.7% in the control group. The proportion of mothers who reported washing their hand and before feeding the child (94.5vs59.9%) and their child's hand washing before feeding(87.8 vs 42.4%). In this study 94.2% mother used boiled water for drinking supported by Rao, Swathi, Unnikrishnan & Hegde (2011) where 90% mothers used boiled water for drinking. This study reveals that 67.5% mothers kept separate utensils for feeding the child. The finding of this study are supported by Rao et al (2011) were 82% mothers kept separate utensils for feeding child. This study shows that 51.1% mothers had practice of feeding sarbottam pitho. In contrast, the finding of the study done by Subba, Chandrashekhar, Binu, Joshi, Rana & Dixit (2007) where as 8.6% mothers had practice of feeding super flour. The finding of this study reveals that there is no significant association between status of complementary feeding practice with the age group of the mother(p=0.196), religion (p=0.087) and type of family(p=0.370). In contradictory the study conducted by Sapkota & Shrestha (2013) there is association between continue practice of breastfeeding with age group of mothers(p=0.004), religion(p=0.003) and type of family(p=0.049). In this study 3/4<sup>th</sup> of the mothers occupation were homemaker and 2/3<sup>rd</sup> mother were live in joint family. This may be due to food insecurity in those household and having more family size the mothers having too little time to prepared food or to feed their child. This study reveal that cent percent of the mothers prepared the complementary food in the right consistency. The finding of this study are supported by Olatona, Odozi & Amu, 2014 were majority of the respondents (84.9%) increased the thickness as the children grew older. The consistency of the food should be gradually improved considering the infants eating skills and age. It should be noted that improper food consistency compromises the appropriate intake of nutrients by the under two years children. The finding of this study reveals that there is no significant association between status of complementary feeding practice with the age group of the mother(p=0.196), religion (p=0.087) and type of family(p=0.370). In contradictory the study conducted by Sapkota & Shrestha (2013) there is association between continue practice of breastfeeding with age group of mothers(p=0.004), religion(p=0.003) and type of family(p=0.049). In this study 3/4<sup>th</sup> of the mothers occupation were homemaker and 2/3<sup>rd</sup> mother were live in joint family. This may be due to food insecurity in those household and having more family size the mothers having too little time to prepared food or to feed their child.

This study shows that there is no association between the educational level (p=0.159) and place of delivery. In contrast, the study conducted by Rao et al (2011) there is association of literacy and initiation of complementary feeds at the recommended time was statistically significant(p=0.038) and the association of

place of delivery and initiation of complementary feeds at the recommended time was statistically significant ( $p=0.033$ ). It may rise question to the health facilities and health institution because they may not carry out the health teaching programmes and activities in proper and effectively regarding complementary feeding practices.

The findings of the study shows that majority of the mothers are below 30 years of age, literate and belonged to Hindu religion residing in urban area. Majority of the mothers were home maker and had institutional deliveries. Hence, there was no variation in the sample population thereby leading to insignificant association among the variables.

The study setting was at immunization clinic, in-spite of researcher effort and control a component of response bias might exist. Adequate complementary feeding practices are a complex process. It is the transition phase of child from breast milk to additional food and the foundation of the nutritional status of the child. It is associated with multiple dimension of human response to feeding habit, technique, knowledge and awareness, health and growing need of the child. There might be present of hidden factors associated with complementary feeding practices. Due to certain limitation questions related to socio-cultural, behavioral factors, food security, health condition of the mother and autonomy of mothers in decision making related to feeding practices was not included in the study.

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